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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,350	09/24/2003	Franco Leonardi	81044331/202-0081	2349

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT	PAPER NUMBER
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3618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/605,350

Applicant(s)

LEONARDI ET AL.

Examiner

Frank Vanaman

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-25 and 27-29 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/24/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Status of Application

1. Applicant's amendment, filed Oct. 23, 2006, has been entered in the application. Claims 1-5, and 21-29 are pending. Claims 27-29 are newly added.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the regulating of the discharging of the battery as a function of voltage of the first electrical bus (claim 26) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. Claim 26 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 26, as now amended, refers to the step of regulating discharging of the battery as a function of voltage of the first bus to control

the voltage on the first bus. The specification as filed fails to describe such a step sufficiently so as to allow one of ordinary skill in the art to understand this step. The drawing (e.g., figure 2) fails to illustrate this step. The specification refers to various control arrangements and steps, but fails to describe such a step. See, for example, paragraph 0023 and 0025, which describe battery charging but fail to describe battery discharging as a function of voltage; paragraph 0034, which describes the operation of the DC/DC converter and its control of the voltage on the bus, but not a regulating of discharging; paragraph 0038 refers to the regulating done by the DC/DC converter, and again fails to describe any regulation of discharging, paragraph 0050 refers to the operation of the controller, and specifically lists those devices which the controller can control, but fails to mention any control of the battery, and fails to describe any regulation of battery discharge as a function of voltage.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konno et al. (US 6,450,274). Konno et al. teach a method for operating a vehicle which has a first bus for powering accessory loads (11) and having a battery (10) connected thereto; and a second bus for powering an electric motor traction device (4) having an accumulator connected thereto (5), wherein the two busses are connected by a regulating device (9) in the form of a DC/DC converter, which regulates the voltage of the first bus (between 9 and 11) to a predetermined voltage level (col. 2, lines 37-39) under a number of operating conditions including an electric motor assist mode (S15), a startup energy management mode (S2, S3), a running energy management mode (S9, S16).

The reference to Konno et al. fails to teach the accumulator as being an ultracapacitor. In view of the transient nature of power demand in a motor assisted hybrid vehicle, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the accumulator with an ultracapacitor for the purpose of more efficiently accommodating transient power demands in the vehicle electrical system.

The reference to Konno et al. fails to teach the regulation of the first bus concurrently with the use of the motor for assist drive. It is very old and well known in the electric control arts to provide a regulating device continuously active even under non-loaded conditions for the purpose of reducing the cycling from active to inactive states and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to maintain the regulation of the first bus continuously for the purpose of continuously maintaining regulation of the first bus to prevent over- or under-voltage conditions, and to reduce cycling of the regulator.

As particularly regards claim 5, while the reference to Konno et al. fails to explicitly teach the control of the DC/DC converter as preventing flow from the second to first busses while in an electrical motor assist mode, however it would have been obvious to one of ordinary skill in the art at the time of the invention to facilitate all flow of energy in the bus supplying the power drive unit (particularly in that the accessory bus is provided with its own source of low voltage power), so as to prevent robbing from the power drive unit when it is in use.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pels et al. (US 6,543,561). Pels et al. teach a method for operating a vehicle which has a first bus for powering accessory loads (11) and having a battery (12) connected thereto; and a second bus for powering an electric motor traction device (6) having capacitor connected thereto (10) through a DC/AC converter (9a), wherein the two busses are connected by a regulating device (9c) in the form of a DC/DC converter, which regulates the voltage of the first bus (connected to 11, 12) to a predetermined voltage level (col. 6, lines 21-23) under a number of operating conditions including an electric motor assist mode (col. 6, lines 23-25), a startup energy management mode (col. 6, lines 44-47), a running energy management mode (col. 7, lines 24-27).

The reference to Pels et al. fails to teach the capacitor as being an ultracapacitor. In view of the transient nature of power demand in a motor assisted hybrid vehicle, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the capacitor with an ultracapacitor for the purpose of more efficiently accommodating transient power demands in the vehicle electrical system.

The reference to Pels et al. fails to teach the regulation of the first bus concurrently with the use of the motor for assist drive. It is very old and well known in the electric control arts to provide a regulating device continuously active even under non-loaded conditions for the purpose of reducing the cycling from active to inactive states and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to maintain the regulation of the first bus continuously for the purpose of continuously maintaining regulation of the first bus to prevent over- or under-voltage conditions, and to reduce cycling of the regulator.

As particularly regards claim 5, while the reference to Pels et al. fails to explicitly teach the control of the DC/DC converter as preventing flow from the second to first busses while in an electrical motor assist mode, however it would have been obvious to one of ordinary skill in the art at the time of the invention to facilitate all flow of energy in the bus supplying the power drive unit (particularly in that the accessory bus is provided with its own source of low voltage power), so as to prevent robbing from the power drive unit when it is in use.

Allowable Subject Matter

7. Claims 21-25, 27-29 are allowed.
8. Claim 26 is not in condition for allowance at this time in that it is not directed to subject matter supported by the application as filed.

Response to Comments

9. Applicant's Comments, filed with the amendment, have been carefully considered. As regards both the Konno and Pels references, applicant has asserted that the motivation for modification of a reference must be taught in the prior art. The examiner does not agree: rather, **as has been specifically pointed out previously**, a conclusion of obviousness may be made from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference (see *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969)), with skill being presumed on the part of the artisan, rather than the lack thereof (see *In re Sovish* 769 F.2d 738, 742, 226 USPQ 771, 774 (Fed. Cir. 1985)); further, references may be combined although none of them explicitly suggests combining one

with the other (see *In re Nilssen* 7 USPQ2d 1500 (Fed. Cir. 1989)). It has long been the law that the motivation to combine need not be found in prior art references, but equally can be found "in the knowledge generally available to one of ordinary skill in the art." *In re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992) (citing *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988)). The motivation to combine can be found either in a prior art reference, or it can be implicit in the knowledge of one of ordinary skill in the art. See *In re Huston*, 308 F.3d 1267, 1280 (Fed. Cir. 2002); *Motorola, Inc. v. Interdigital Tech. Corp.*, 121 F.3d 1461, 1472 (Fed. Cir. 1997).

Sources suggesting a combination may be: (1) the combined teachings of the prior art, (2) the knowledge of the ordinary practitioner and (3) the nature of the problem to be solved. "The test for implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed.Cir. 2000). In *Richard Ruiz and Foundation Anchoring Systems, Inc. v. A.B. Chance Company*, No. 03-1333 (Fed. Cir. January 29, 2004), the court emphasized that an "express written teaching in the art" to combine references was not required [emphasis added]. Rather, motivation may come from "the nature of a problem to be solved, leading inventors to look to references relating to possible solutions to that problem."

Please further note the following from Section 2144 of the MPEP: "The rationale to modify or combine the prior art does not have to be expressly stated in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent...The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem...It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by Applicant." Also Chief Judge Nies writes in a concurring opinion, "While there must be some teaching, reason, suggestion, or motivation to combine existing elements to produce the claimed device, it is not necessary that the cited references or the prior art specifically suggest making the combination...In sum, it is off the mark for litigants to argue, as many do,

that an invention cannot be held to have been obvious unless a suggestion to combine prior art teachings is found in a specific reference". See *In re Oetiker* 977 F.2d 1443, 24 USPQ.2d 1443 (Fed.Cir.1992).

Applicant further asserts that the reference of Konno fails to teach voltage regulation. The examiner disagrees. Note the Konno reference at col. 2, lines 37-40. In this case, an explicit teaching is present, and the explicit teaching further teaches an explicit value (in this case, 12V). The Pels reference, likewise teaches a regulation (in this case a reduction, at col. 6, lines 12-25

Applicant refers to the office action as containing suggestions as to the modification of claim 26. The examiner finds no suggestions in the Office action, and further notes that applicant's amendment of claim 26 adds new matter. Applicant is hereby invited to explicitly point out the precise wording in the office action which suggests applicant add material which was not originally disclosed in the application to claim 26.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on

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access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

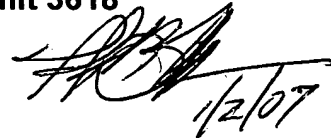
A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
Art Unit 3618



1/2/07